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CENTRAL INTELLIGENCE AGENCY

**INFORMATION REPORT**

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REPORT

CD NO.

COUNTRY **East Germany**

SUBJECT **Institut fuer Ionen-, Elektromagnetik  
und Uebermikroskopie, Dresden (Ardenne Institute)**

DATE DISTR. **12 July 1955**

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1. **Manfred von Ardenne's research**  
institute at 29/31 Plattenleite, Dresden-Weisser Hirsch

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2. **While in Sinop,** Ardenne worked on the realization of his plan to erect a research institute of his own in Dresden. Ing. Fritz Richter from Chemnitz, an acquaintance of von Ardenne's brother, made all the necessary arrangements for the establishment of the institute on the spot according to directives received from von Ardenne. Von Ardenne gave the money for the purchase of the buildings required. Some German returnees from the USSR also contributed to the fund required for the institute. A third of the money required is said to have been made available by the GDR government. The group of co-workers of Manfred von Ardenne was formed at Sinop in 1954. These men were ready to continue to work under von Ardenne in Dresden after their repatriation. This group includes the members of the von Ardenne organization in Lichterfelde and such men as were willing to remain in the GDR for personal or economic reasons.

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COUNTRY East Germany

REPORT

SUBJECT Institut fuer Ionen-, Elektronenphysik und Ueberniskroskopie (Electronics and Electron Microscopy) DATE OF REPORT 5 June 1957

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LAST REPORT ON SUBJECT  
(If applicable)

EVALUATION OF

ANNEXES 6 - 5 blueprints with  
legend on ditto

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APPRAISAL OF

1.

Manfred von Ardenne's research  
institute at 29/31 Plattleite, Dresden-Weisser Hirsch

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2. Already in Zinop, von Ardenne worked on the realization of his plan to erect a research institute of his own in Dresden. Ing. Fritz Richter from Chemnitz, an acquaintance of von Ardenne's brother, made all the necessary arrangements for the establishment of the institute on the spot according to directives received from von Ardenne. Von Ardenne gave the money for the purchase of the buildings required. Some German returnees from the USSR also contributed to the fund required for the institute. A third of the money required is said to have been made available by the GDR government. The group of co-workers of Manfred von Ardenne was formed at Zinop in 1954. These men were ready to continue to work under von Ardenne in Dresden after their repatriation. This group includes the members of the von Ardenne organisation in Lichterfelde and such men as were willing to remain in the GDR for personal or economic reasons.

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Electronics and Electron Microscopy Institute  
Headed by von Ardenne at Dresden-Weisser Hirsch,  
Telephone Extension 3672.

3. Chief : Prof. Baron Manfred von Ardenne

This private research institute is subordinate to the office of nuclear research and nuclear technology at Berlin-Niederschöneweide. The staff of the institute consisted of about 45 persons. Wages and salaries were paid by the business manager Frits Richter. The money is said to be furnished by the Office for Nuclear Research.

Regarding security, the institute and its personnel is controlled by the MFS agency on Bautzener Landstrasse, Dresden. This office is headed by Major Kossart. At night, the institute is guarded by watch men accompanied by watch dogs.

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5. Business manager Frits Richter

6. First secretary Frau Ellen Suchland

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## 7. Installations of the Institute included:

Isotope Laboratory and Measuring Plant	Building No 29, groundfloor
High Frequency Laboratory	" " 31, " "
Designs Bureau	" " 31, first floor
Chemical Laboratory	" " 29, basement
Optical Laboratory	" " 29, "
Photographic Laboratory	" " 29, "
Glass Blowing Laboratory	" " 31, 2d floor
Main Workshop	" " 27

The magnetic isotope separating department was located on the ground floor of building No 14 Dornblutstrasse which was occupied by the firm of VEB Vakutronik.

8. Isotope Laboratory

Chief

Dr. Hans Westmeier

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Dipl. Ing. Bruno Wienecke,

Laboratory assistant Helga Heuer

Laboratory assistant Gisela Roesper

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9. High Frequency Laboratory.

Chief : Dipl. Ing. Heins Rackwitz

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Laboratory assistant Renate Brose

Laboratory assistant Gall,

Electrician Storch,

Mechanic, name unknown.

Designs Bureau.

10. Chief: Obering. Gerhard Jaeger,

Designer Hans Schlesing,

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- 6 - [REDACTED]

15. No personnel data of the optical and chemical laboratories were available. Only female laboratory assistants are employed there.

Research Work at the Institute.

16. In the spring of 1955, the GDR government planned a comprehensive cooperation between the institute of von Ardenne and VEB-Vakutronik (Prof. Hartmann). Ardenne's institute was to undertake scientific research work and the results of this work were to be utilized by VEB Vakutronik. These plans did not materialize because of animosity existing between Ardenne and Hartmann. The office for nuclear research, acting through its representative Rambusch occasionally assigns to the two establishments missions which have to be jointly accomplished.
17. After the summer of 1955, the following work was undertaken at the institute:
- a. New method of silver- and platinum coating of glass bulbs by means of the vaporization method. These glass bulbs were required for measuring tubes. Dr. Westmeier, no details available.
  - b. Development of a vacuum leak spotter, Dipl. Ing. Wienecke.
  - c. New method for the manufacture of measuring tubes. Dipl. Ing. Wienecke. No details available.
  - d. After November 1955, development and construction of a magnetic isotope separator. Von Ardenne, Dr. Westmeier, Schlesing, Jaeger, [REDACTED] The separator was built at VEB Vakutronik.
  - e. Development of a duoplasmatron source for the production of protons. The device was built by the firm of VEB Otto Buchwitz Werk, at 130 Grossenhainerstrasse, Dresden.
  - f. Development and designing of a microscillograph. Von Ardenne, Dr. Westmeier and Jaeger.
  - g. Work on the improvement of dosimeters. Dr. Westmeier.
18. [REDACTED] projects:
- a. 100-kV plant installed at building No 29.
  - b. Vacuum vaporization plant, installed at building No 29.
  - c. Repair of three sets of vacuum pumps.
  - d. 32-kV plant, installed at building No 29.

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- e. A vacuum plant delivered by a firm in Sangershausen put into working order.
- f. Manufacture of quartz filaments for dosimeters [REDACTED]  
[REDACTED] these filaments were measured under the microscope.
- g. Electric installation work for building No 31 and the technical offices at VEB-Vakutronik.
- h. [REDACTED] magnetic isotope separator set up on the premises of VEB-Vakutronik.

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Note: The blowing of quartz filaments for dosimeters was described as follows:

Over the flame of a welding torch a black cloth was spread at a safe distance; two reflectors directed their light against this cloth. Quartz rods, 1 mm in diameter, were treated over the open flame in such a way that the pressure of the flame and its heat hurled capillary tubes against the black cloth. With a forceps these tubes were picked up from the cloth and were then measured under the microscope. The values obtained were between 1 and 10  $\mu$ .

- 19. It was planned to develop and build a mass spectograph for the Reactor Institute in process of construction for Prof. Barwich at Rossendorf near Dresden. Work on the construction drawings required for this project were started in the fall of 1956. Von Ardenne was very enthusiastic about this project. No details available.
- 20. The production of radio-active isotopes for medical purposes was also envisaged.
- 21. The project for the construction of an ion pump was believed to be a failure, because it appeared impossible that high vacuums might be achieved through ionization.
- 22. Prior to 28 August 1956, no profit was made from the work done at the institute. [REDACTED]  
[REDACTED]  
The leading men at von Ardenne's institute were Dr. Westmeier, Obering, Jaeger, and Dr. Reibedans.
- 23. Concerning the magnetic isotope separating plant for light isotopes, it was learned that von Ardenne discussed this project in Moscow in April 1955. (Emilyanov ?). [REDACTED] the Soviets were greatly interested in this project, particularly as he told them that this project could be realized

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without much expenditure, because much of the scientific work required for the separating plant had already been done at the Zinop Institute. Ardenne also succeeded in taking along from Zinop valuable records which could be utilised for the isotope separating plant scheduled to be set up in Dresden. Dr. Froehlich's work was very useful for this project.

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The work for this project was undertaken in three adjoining workshops of VEF Vakutronik, Dresden.

The main responsibility for the experimental construction of the isotope separating plant rested with Dr. Rambusch, who checked all construction drawings and all requisitions for materials, estimates of costs etc. Dr. Rambusch will accept the completed isotope separating plant. Prof. Hartmann was responsible for the financial side of the project, and his business manager, Hieke, was put in charge of finances as his deputy.

25. The staff of scientists working on the magnetic isotope separator included:

a. Group of Physicists:

von Ardenne,  
Dr. Westmeier,  
Ing. Fritz Kohler, detached from the Trafwerk  
Ing. Petter  
Laboratory assistant )

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b. Group of Electricians:

Foreman Hermann Will, a returnee from Agudseri ) from VEB  
Two or three electricians. ) Vakutronik

All designs were furnished by the designs bureau of the Institute.

26. The total costs for the magnetic isotope separator was estimated at 2.5 million DEM. Prior to 23 August 1956, a sum of 1.2 million DEM was spent. At VEB Vakutronik two magnetic isotope separators were being built. One of them was to remain at VEB Vakutronik, and the other one was to be offered to one of the East Bloc countries. Establishments which were interested in magnetic separators included:

The Institute at Buch  
The Dresden Institute of Technology  
Seven separators were scheduled to be sold to East Bloc countries.  
The separator under construction at the institute can easily be modified for the separating of heavy isotopes. The present isotope is designed for a working temperature of 900°C; a separator for heavy isotopes will work however at a temperature of 2,200° to 2,400° C. The pressure condition will be the same.

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27. The firm of VEB Otto Buchwitz, at 160 Grossenhainerstrasse, Dresden, an enterprise for mining and electronic equipment (business manager Sehlmann, technical director Harold, he died in the meantime), submitted estimates of costs for:

2 magnets of 25 tons each, with complete chambers,  
 4 magnetic coils,  
 2 generators for the feeding of the magnets  
 Kuehlwappeln (?) (cooling devices) for oil diffusion pumps  
 1 complete duoplasmatron source  
 Switching desks and switching equipment  
 Insulating frames.

The total costs for the equipments to be delivered by the firm of Otto Buchwitz amounted to 860,000 DME.

28. The duoplasmatron source for the production of protons was a gas source, hydrogen, and worked with a pressure of  $5 \times 10^{-3}$  torr and less. The greatest effect was at 250 mA. The source could be used for continuous operations and impulse operations. The manufacture of the source is very simple while a cathode (oxide) can be used and only very little cooling is required. The emission opening is 1.5 mm. The source has a large useful effect and works without magnetic contraction. It was completed in May 1956. The switching desks and switching devices required for the source were built by Dipl. Ing. Hans Gruber, Ing. Hains Wiener, Ing. Manfred Klein all of them of VEB Otto Buchwitz.
29. The iron required for the two magnets was ordered from VEB Steel and Rolling Plant Brandenburg. A total of 150 tons were delivered in five batches. The five-ton blocks were rolled at VEB Kupfer- and Bleichwerk Michael Niederkirschner at Eisenburg/Harz Mts. About 17% of the blocks delivered were unusable because of cavities. Twenty tons of iron were delivered by VEB Steel and Rolling Mill Groeditz. The negotiations were conducted with Prof. Mau. The iron blocks were planed at the firm of VEB Planeta, Coswig, and cut at VEB Otto Buchwitz. The total costs for the manufacture of these iron blocks and their machining amounted to 307,000 DME. The 20 tons of iron delivered by VEB Steel and Rolling Mill Groeditz cost 7,000 DME.
30. At the VEB Transformer and X-Ray Equipment Plant at Dresden-Uebigau, Dr. Winter, chief of the test laboratory. Herr Brel, was in charge of the control of designing. Equipment ordered from this firm included:

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60-kV plant with band pass filter,	36,000 DME
30-kV plant	18,000 "
3-phase insulating transformer	9,000 "
1 stabilizer	16,000 "
1 high-tension stabilizer	30,000 "
Several small transformers	4,000 "

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31. At VEB Radio Engineering Plant on Grossenhainerstrasse, Dresden, [redacted] graduate physicist Siewert [redacted] was in charge of the test field for antennas. Siewert developed the stabilizing devices for the magnet. The stabilizing equipment cost 10,000 DME and was completed in July 1956.

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32. The firm of VEB Galvanotechnik at 76 Torgauer Strasse in Leipzig, was ordered to deliver:

1 generator, 500 A,	1,600 DME
1 generator, 350 A,	1,400 "

33. The private firm of Holleng & Mertens at Sangershausen was ordered to deliver:

4 vacuum pumps of type 42/4, cost per unit 2,000 DME  
2 oil diffusion pumps of 3,000 liters each

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34. VEB Elbtalwerk, 29 Rudolf Breitscheidstrasse, Heidenau near Dresden was ordered to furnish a generator of 10 A, 500 V. Negotiations were conducted with Obering. Richter [redacted]

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35. Numerous measuring sets such as amperimeters, voltmeters, frequency meters etc were ordered from VEB "I.V. Stalin" Elektroapparatwerk at Treptow. Negotiations were conducted with Prof. Maurer [redacted]. Additional minor orders for materials and apparatus were handled by VEB Otto Buchwitz, Dresden.

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36. In August 1956, installation work at the Isotope Separating Plant was in full swing. The magnets, the oil diffusion pumps, the power sources, the transformers, the band pass filters, the insulating transformer, the switching plant had been set up. The generator hall was being installed and the 60-kV-300 mA plant was expecting acceptance tests. The plant had been delivered by VEB Transformer Works at Dresden-Uebigau.

37. At VEB Vakutronik [redacted] equipments manufactured at this installation included:

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Dosimeters,  
Microoscillographs,  
Counting tubes,  
Duoplasmatron sources,  
Sources and targets for separators

The Vakutronik Plant was housed in a 4-story building in which card board covers were formerly made. The workforce was estimated at 200 men.

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For sketches, see Annexes 1 - 6.

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**Layout Sketch of the Institute of Manfred von Ardenne.**

**Legend.**

1. Building No 29, the institute proper; on first floor private rooms of von Ardenne and his private laboratory.
2. Building No 31, completed in November 1955; offices on the ground floor, designs bureaus on the second floor, workshops and storage facilities on the second floor.
3. Old building converted to institute purposes, workshops on the ground floor and first floor.
- 3a. Garages
4. Astronomical observatory, private property of von Ardenne.
5. Swimming pool
6. Large terrace
7. Concrete bunker erected for measuring purposes; 4.5 x 5.5 m, about 4 m high, concrete walls, 1.2 m thick. The steel rods of the reinforced concrete were grounded.

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Annex

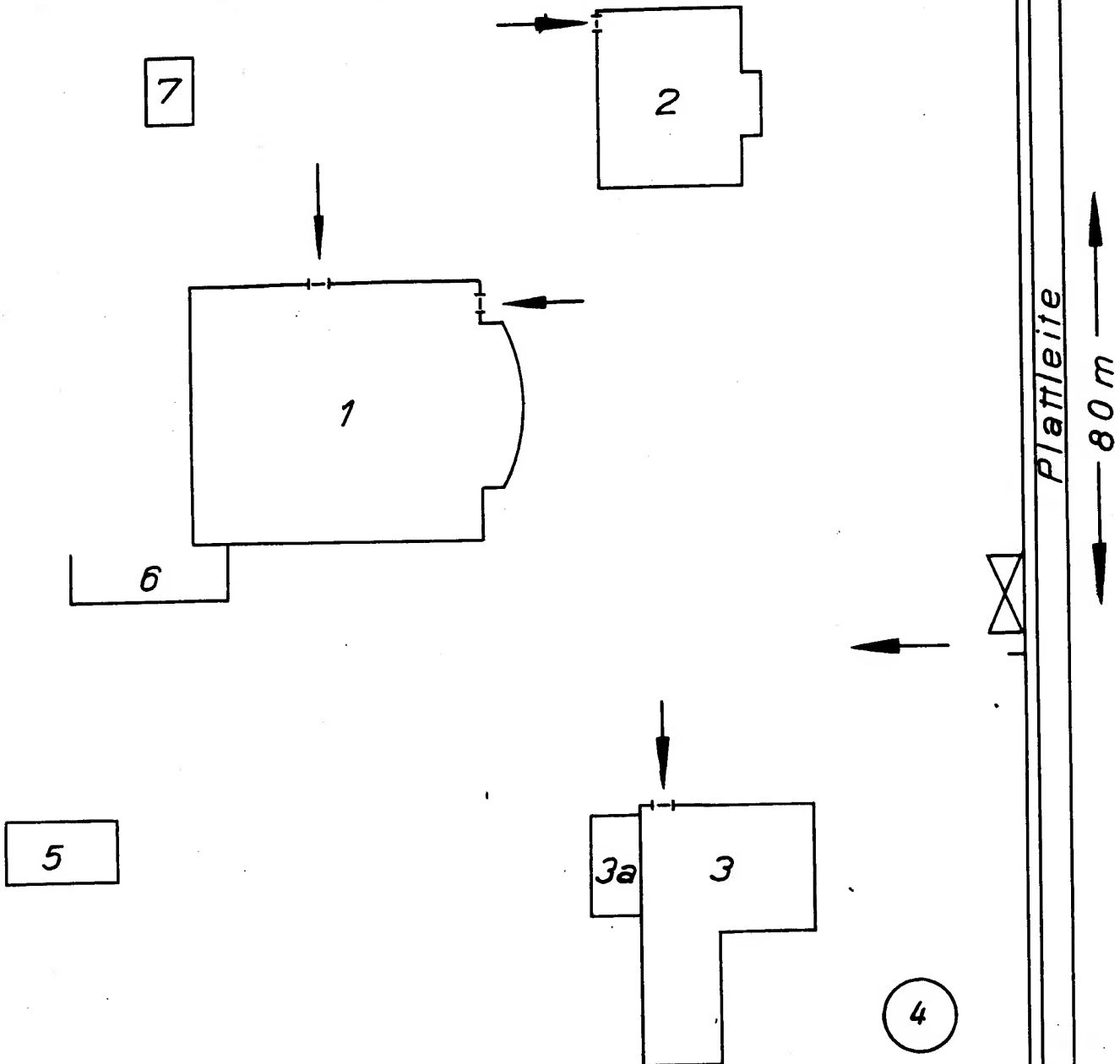
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Anlage 1 zu

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Legend: see next page.



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Annex 2

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**Layout Sketch of Building No 29.****Legend.**

1. Office of von Ardenne
2. Office of Frau Suchland, secretary to von Ardenne
3. Room housing the electron microscope, the 100 kV plant and mass spectrograph; Dr. Westmeier and Fraulein Roesper.
4. Room housing the micro oscillograph, Fraulein Heuer, institute library.
5. Vacuum vaporization plant, vacuum test stands, desks for students of the Dresden Institute of Technology
6. Vacuum leak spotter, vacuum test stands, vaporization plant, Dr. Westmeier and Wianscke.
7. Measuring sets, drawing boards, library
8. Storage room
9. Toilet

The basement housed the chemical laboratory and the optical and photographic laboratories.

  
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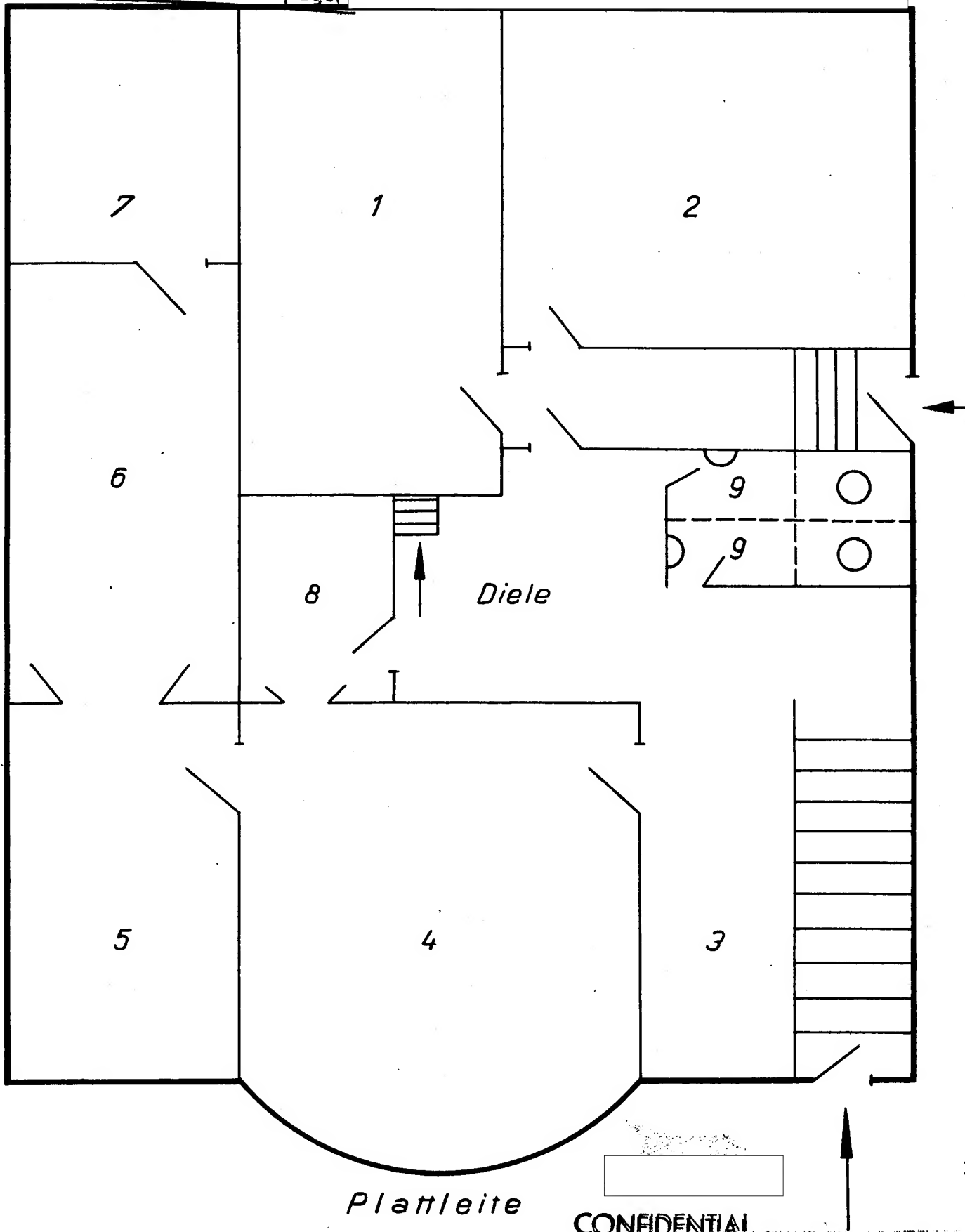
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Annex 3

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**Layout of Building No 31.****Legend.****Ground floor**

1. Office Dr. Westmeier
2. High frequency laboratory, Rackwitz
3. Office of Fritz Richter
4. Office of Max Wied
5. Office of Dr. Reibedans
6. Toilets

**First floor (Designs Bureau)**

1. Technical draftsman
2. " "
3. Office of Schlesing and Kaup
4. Office of Obering. Jaeger
5. Duplicating department

**Second floor**

1. Lathes, boring machines for foreman Lorens
2. Glass blowing set
3. Storage facilities
4. Glass blowing department
5. Storage of glass

**Note:** The layout sketches of the three stories of the building was exactly the same.

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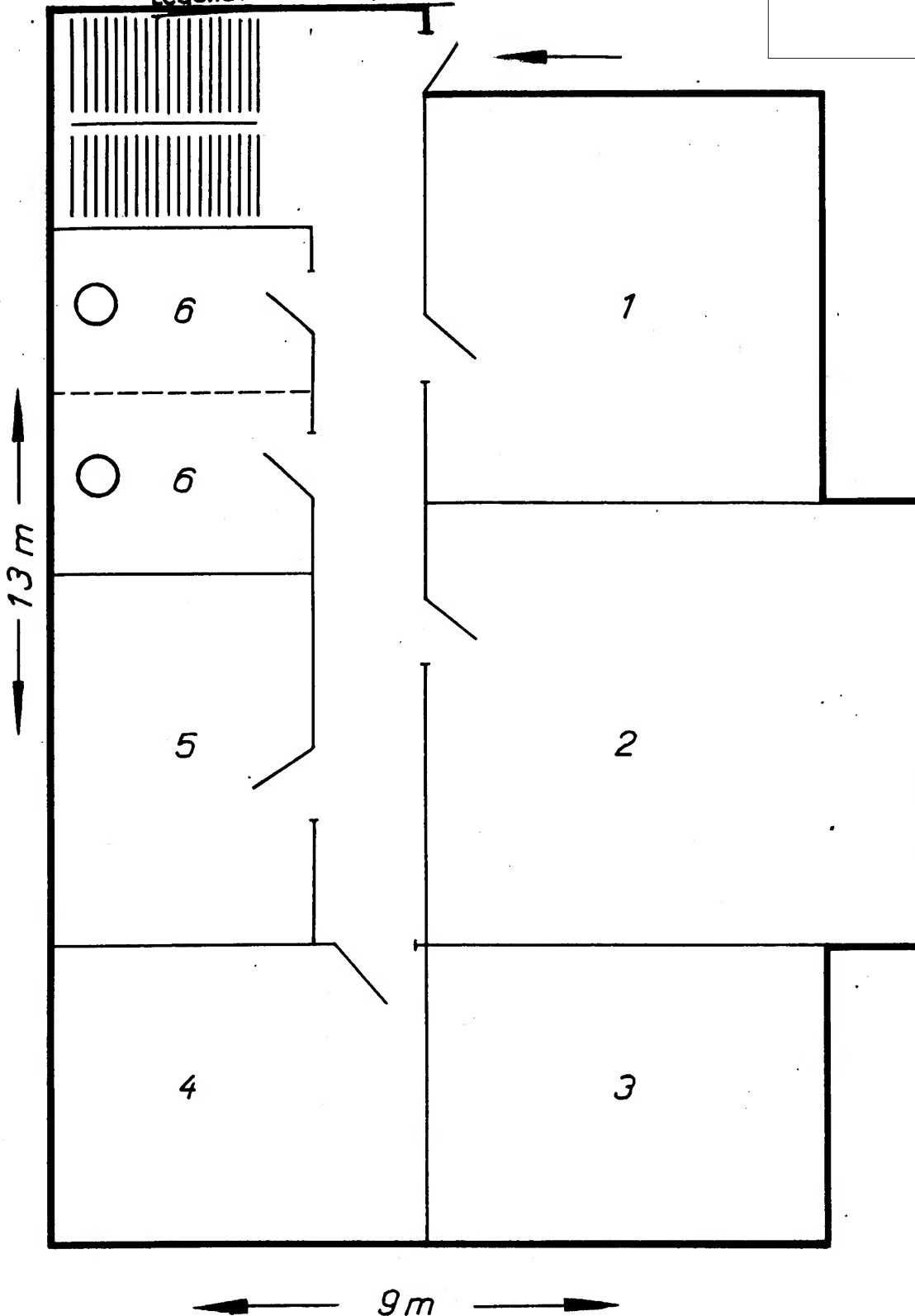
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Annex 4

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**Layout Sketch of Building No 27.**

**Legend.**

**Ground floor**

1. Mechanical workshop, Roggenbuck and Hoffmann
2. Lathes, boring machines, milling machines etc.
3. Assembly room
4. Newly added annex
5. Toilets

**First floor**

1. Room occupied by Roggenbuck, engraving machines
2. Optical equipment
3. Precision mechanics' room
4. Measuring room

Note: The layout sketches of the two stories <sup>was</sup> exactly the same.

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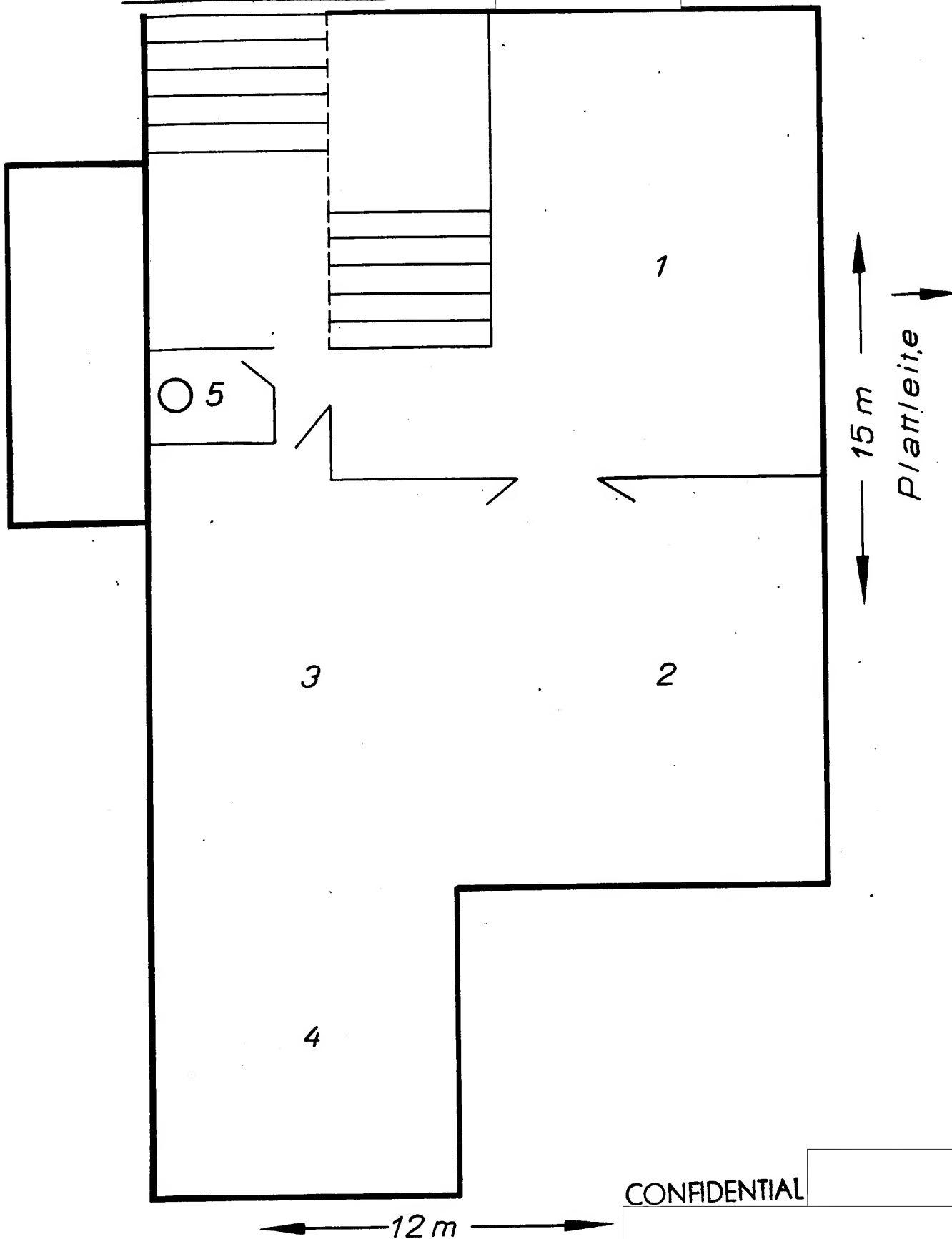
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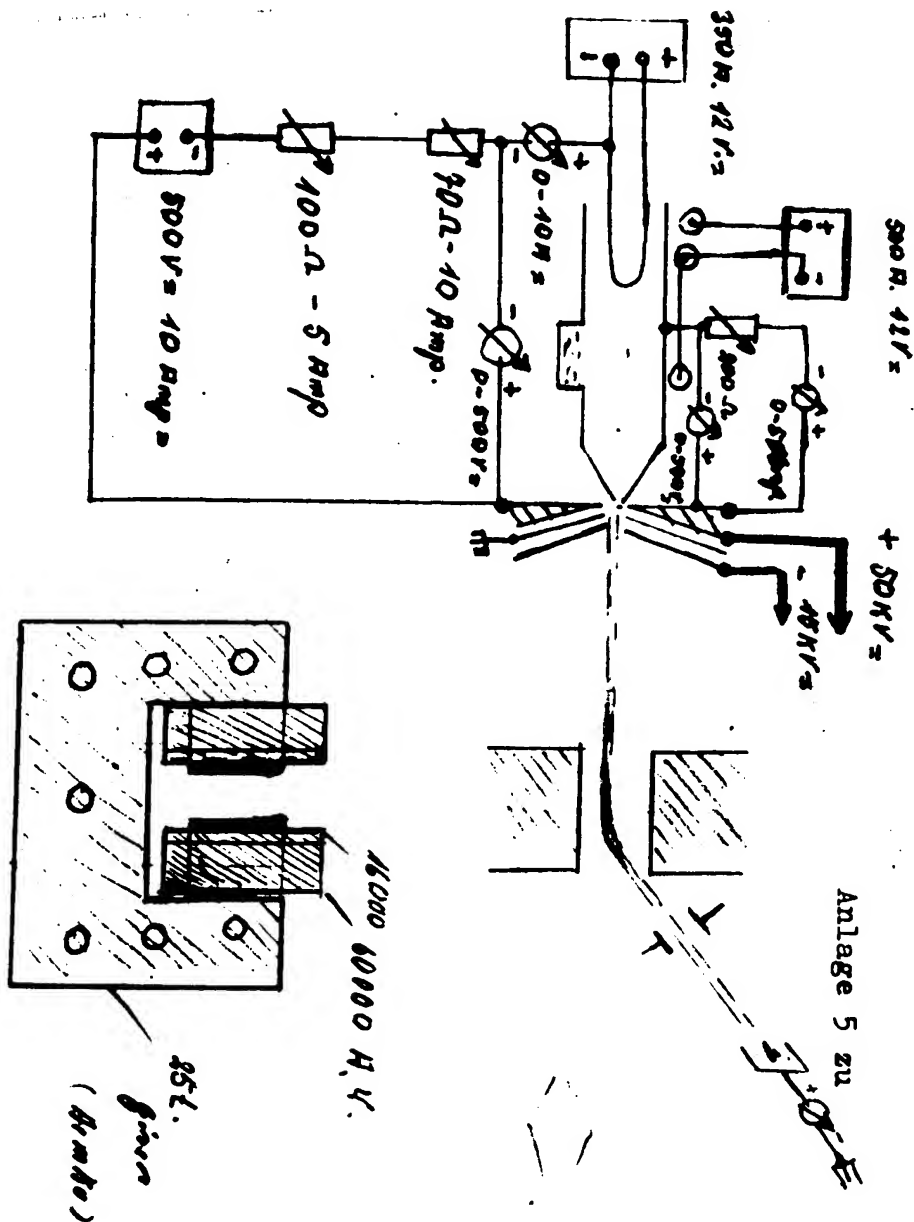
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Annex 6

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Legend

1. Chamber and source (Duoplasmatron)
2. Oil diffusion pump
3. Stabilizer, 22 kV
4. Switch board
5. Switch desk
6. Generator room (high tension)
7. Band pass filter
8. High tension transformer 60 kV
9. Insulating transformer
10. Switch board (high tension)
11. Two water resistances for the cooling of sources
12. Outlet
13. Three basins
14. Two magnets
15. Two oil diffusion pumps
16. Two sources
17. Switchboard
18. and 19. Desks
20. High tension transformer

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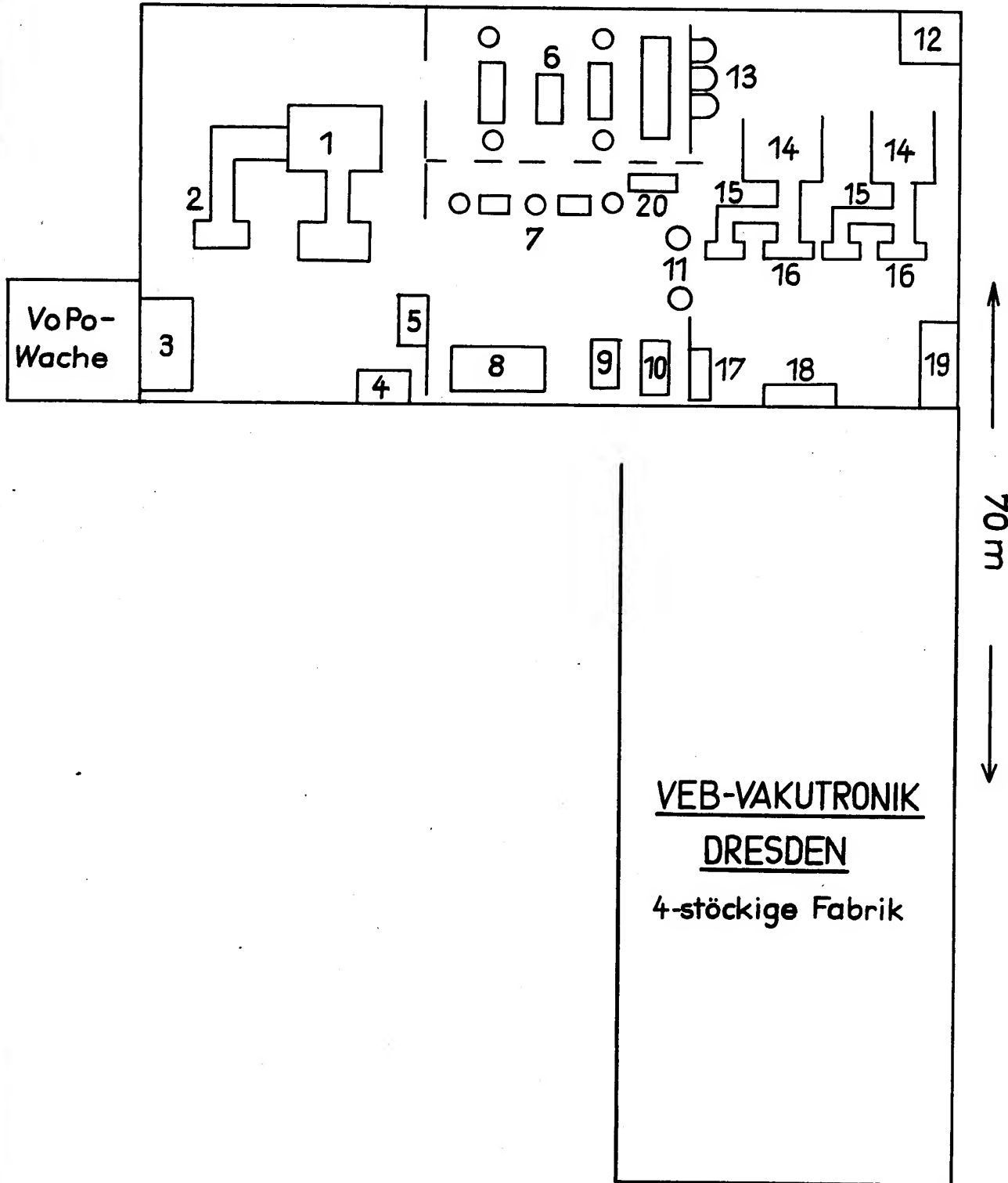
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